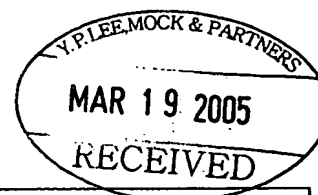


PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)



Applicant's or agent's file reference LG-22415-PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/KR2004/001646	International filing date (day/month/year) 03 JULY 2004 (03.07.2004)	(Earliest <input type="checkbox"/> Priority Date (day/month/year) 12 JUNE 2004 (12.06.2004) <input type="checkbox"/>
Applicant LG CHEM. LTD. et al		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b) ☐

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II) ☐

3. ☐ Unity of invention is lacking (See Box No. III) ☐

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b) by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

b. ☐ none of the figure is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/001646

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 B01J 27/16

According to International Patent Classification (IPC) to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B01J, C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1975

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,233,093 A (ARCO Chemical Technology, L. P. 03 August 1993 see the whole document	1 - 13
A	US 5,962,744 A (The Research Foundation of State University of New York 05 October 1999 see the whole document	1 - 13
A	US 5,491,266 A (Union Carbide Chemicals & Plastics Technology Corp. 13 February 1996 see the whole document	1 - 13
A	US 4,450,299 A (Exxon Research and Engineering Co. 22 May 1984 see the whole document	1 - 13

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:
 "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) which is cited to establish the publication date of citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 "&" document member of the same patent family

Date of the actual completion of the international search

11 MARCH 2005 (11.03.2005)

Date of mailing of the international search report

11 MARCH 2005 (11.03.2005)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, SI GEUN

Telephone No. 82-42-481-8151



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2004/001646

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5,233,093 A	03.08.1993	JP 6087782 A2 EP 580358 A1 ES 2145762 T3 DE 69328591 C0	29.03.1994 26.01.1994 16.07.2000 15.06.2000
US 5,962,744 A	05.10.1999	AU 3353499 A1 WO 9950214 A1 CA 2326047 AA JP 2000053606 A2 EP 1066236 A1	18.10.1999 07.10.1999 07.10.1999 22.02.2000 10.01.2001
US 5,491,266 A	13.02.1996	WO 9303839 A1 US 5360938 A EP 600020 A1 JP 7502488 T2 BR 9206391 A DE 69208093 C0 CN 1038938 C JP 2966094 B2	04.03.1993 01.11.1994 08.06.1994 16.03.1995 01.03.1995 14.03.1996 01.07.1998 25.10.1999
US 4,450,299 A	22.05.1984	US 4480137 A US 4451673 A US 4454353 A	30.10.1984 29.05.1984 12.06.1984